

303(d) List:

A list of streams, lakes, and estuaries where state water-quality standards are not met or where technology-based controls are not sufficient to achieve standards.

Adsorption:

The retention of atoms, ions, or molecules on the surface of another substance.

Aggradation:

The accumulation of sediment, usually implying an increase in deposit thickness.

Aeration:

The act of mixing a liquid with air (oxygen).

Aerobic:

Able to live, grow, or take place only when free oxygen is present.

Alluvium

Unconsolidated material (sediment) deposited by flowing water.

Alluvial fan:

A landscape feature whose surface is shaped like an open fan or a segment of a cone and is formed by the accumulation of sediment and organic material deposited by flowing water.

Ammonification:

The production of ammonia from the decomposition of organic matter.

Anaerobic:

Able to live, grow, or take place where free oxygen is not present.

Anecdotal information:

Information based on descriptions of individual cases rather than on controlled studies.

Anoxic:

The total deprivation of oxygen.

Aquifer:

A natural underground layer of porous, water-bearing materials (sand, gravel) usually capable of yielding a large amount or supply of water.

Basin:

(see Watershed)

Baseflow:

Groundwater discharge to the stream; the flow not accounted for by storm runoff.

Bedload:

Sediment carried along a channel bed by sliding, rolling, or bouncing.

Bedrock:

Solid rock that underlies the earth's surface.

Beneficial use:

Taken from Section 303(c)(2)(A) of the Clean Water Act and state statutes, these include municipal, industrial, and domestic water supply; contact recreation; non-contact recreation; fish and wildlife; and agriculture use (irrigation).

Benthic:

Of or pertaining to the bottom of a body of water.

Best management practice (BMP):

A method that has been determined to be an effective, practical means of preventing or reducing pollution or protecting resources; generally applies to non-point sources of pollution.

Bioaccumulation:

The process by which a contaminant accumulates in the tissues of an organism.

Biochemical oxygen demand (BOD):

The amount of oxygen consumed by microorganisms (mainly bacteria) and by chemical reactions in the process of degrading organic matter in water.

Biota:

The animal and plant life of a given region.

Braided stream:

A channel pattern with multiple threads of streamflow.

Bulk density:

Mass per unit of volume.

Calcareous:

Of or containing calcium carbonate, calcium, or limestone.

Carbonaceous:

Of or containing carbon.

Cartographic:

Of or pertaining to maps.

Channel:

A stream or river bed; generally refers to the physical form where water commonly flows.

Channel morphology:

(see Morphology)

Channel response:

Changes in the shape or structure of a channel.

Channelization:

The act of straightening a stream; typically widens and deepens the stream as well to improve the flow of water.

Chelation:

The joining together of metals (such as copper) with certain organic compounds.

Coarse sediment:

Particles that are typically considered gravel-sized and larger; generally transported as bedload.

Chemical oxygen demand (COD):

A measure of the oxygen-consuming capacity of inorganic and organic matter present in water; the amount of oxygen consumed from a chemical oxidant in a specific test.

Coliform:

A group of bacteria found in the intestines of warm-blooded animals (including humans), also in plants, soil, air, and water. Fecal coliforms are a specific class of bacteria that only inhabit the intestines of warm-blooded animals. The presence of coliforms is an indication that the water is polluted and may contain pathogenic organisms.

Colloidal:

Of or pertaining to very small, finely divided solids that do not dissolve and remain dispersed in a liquid due to their small size and electrical charge.

Colluvium:

The soil and rock debris on a hillslope that has been transported from its original location.

Community resource:

An environmental asset that has important cultural, economic, or spiritual value for the people of the region (e.g., medicinal herbs, drinking water, agricultural land, fish and wildlife).

Critical questions:

A tool used in the technical modules to help identify the watershed assessment methods that will address the issues of concern.

Cumulative effects:

The combined environmental effects over time of multiple land use activities, typically in a watershed area.

Degree day:

A rough measure estimating the amount of heat in a given area; it is defined as the difference between the mean daily temperature and 65 degrees Fahrenheit.

Delivery potential:

The likelihood that a hazardous input will be transported to a community resource.

Denitrification:

The anaerobic biological reduction of nitrate to nitrogen gas.

Dichotomous key:

A system that classifies materials by separating choices into two categories.

Dissection frequency:

The density of channels in a specified area.

Dissection pattern:

The distribution of channels in a specified area.

Disturbance event:

An uncommon occurrence from a natural agent, such as floods, fires, or hurricanes, that has a significant influence on ecosystems

Diurnal:

Daily

Dry ravel:

(see Ravel)

Ecoregion:

An area with a relatively uniform pattern of terrestrial and aquatic ecological systems.

Effluent:

Wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial point source, such as a pipe. Generally refers to wastes discharged into surface waters.

Eh:

The electrical potential required to transfer electrons from one compound or element (the oxidant) to another compound or element (the reductant); the reduction-oxidation potential. Typically used as a qualitative measure of the state of oxidation in water treatment systems.

Empirical:

Relying upon or gained from experiment or observation.

Entrenchment:

(see Incision)

Erosion:

The removal of sediment or rock from a point in the landscape.

Eutrophication

The increase in the nutrient levels of a lake or other body of water; this usually causes an increase in the growth of aquatic animal and plant life.

Evapotranspiration:

The release of water vapor into the atmosphere by the combination of direct evaporation and transpiration by plants.

Fan:

(see Alluvial fan)

Fecal coliform:

(see Coliform)

Fine sediment:

Particles that are typically sand-sized and smaller; generally transported as washload.

Fixation:

(see Nitrogen fixation)

Floodplain:

A nearly level alluvial plain that borders a channel and is occasionally inundated by floods (unless artificially protected). The landform is formed by sediment transport and deposition from flows over the streambank and lateral movement of the stream.

Fluvial:

Of or pertaining to streams; produced by stream action.

Functions:

The contribution of an ecosystem element, such as vegetation, to the natural working of the ecosystem.

Geomorphic channel type:

A stream reach or group of reaches that respond similarly to changes in landscape forming processes, such as water runoff, erosion, and vegetation growth.

Geomorphic process:

A landscape altering system, such as water runoff or erosion, that influences the movement and shape of the physical landscape.

Geomorphic responsiveness:

The degree to which a stream channel changes its morphology or behavior due to alterations in landscape forming processes, such as water runoff, erosion, and vegetation growth.

Geomorphology:

The study of physical landscapes (landforms) and the processes that create and mold them.

Geographic information system (GIS):

A computer system designed for storing, manipulating, analyzing, and displaying data in a geographic context, usually as maps.

Glacial:

Of or pertaining to distinctive processes and features produced by or derived from glaciers and ice sheets.

Gradient:

The slope or incline measured by the change in elevation over a specified length. Measurement units may consist of either a dimensionless proportion (percentage) or an angle based on the 360-degree circumference of a circle.

Groundwater:

The water found below the surface of the land and contained in the pore spaces of saturated geologic media (sand, gravel). Groundwater is the source of water found in wells and springs.

Hazardous input:

Any element of the ecosystem that can affect a community resource (e.g., sediment, nutrients, heat)

Headwaters:

The upper watershed area where streams generally begin; typically consists of 1st- and 2nd-order streams

Hillslope process:

(see Geomorphic process)

Hydrogeology:

The study of the interaction of groundwater and the surrounding soil and rock.

Hydrograph:

A graphical plot of streamflow data over time.

Hydrologic regime:

The system that describes the occurrence, distribution, and circulation of water on the earth and between the atmosphere.

Hyetograph:

A graphical plot of precipitation data over time.

Hypothesis:

An assumption that requires verification or proof.

Impervious surface:

A material that does not allow, or allows only with great difficulty, the infiltration of water.

Incision:

The downward cutting of a stream into the earth's surface.

Interception:

In hydrology, the accumulation of precipitation on vegetation and other above-ground surfaces and its evaporation during and after a storm event.

Interdisciplinary:

Interaction between different branches of knowledge.

Interstitial space:

The matrix of air or liquid between sediment particles; pore space.

Isohyet:

A line on a map along which all points receive the same amount of precipitation.

Karst:

A landscape influenced by the dissolving of limestone or gypsum; usually characterized by caves, sinkholes, and underground drainage.

Landform:

Any physical, recognizable form or feature of the earth's surface having a characteristic shape and produced by natural causes.

Landscape:

The traits, patterns, and structure of a specific geographic area, generally including its physical environment and biological composition.

Land type:

A feature on the landscape with a generally uniform shape and set of physical characteristics; often created by a single geomorphic process.

Leachates

A liquid that results from water collecting contaminants as it trickles through waste material. Leaching may occur in farming areas, feedlots, and landfills and may result in hazardous substances entering surface water, groundwater, or soil.

Life history stage:

A portion of an organism's life with specific living requirements.

Loading:

(see Pollutant loading)

Loess:

Fine-grained material that has accumulated by wind deposition.

Low flow:

Minimum instantaneous streamflow during periods of low water runoff.

Macroinvertebrate:

A larger organism without a spinal column, such as an aquatic insect.

Mass wasting:

The dislodgment and downslope transport of earth material as a unit under direct gravitational stress. The process includes slow displacements such as soil creep and rapid movements such as landslides and avalanches.

Mainstem:

The primary, and generally largest, branch of a river.

Module:

(see Technical module)

Morphology:

The form and structure of an object.

National Pollutant Discharge Elimination System (NPDES):

A provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the EPA, a state, or a tribal government on the reservation.

Natural disturbance:

(see Disturbance event)

Natural storage:

(see Watershed storage)

Nitrogen fixation:

The biological or chemical process by which elemental nitrogen from the air is converted to organic or available nitrogen.

Non-point source:

Pollution sources that are diffuse and do not have a single point of origin or specific outlet. The pollutants are generally carried off the land by water runoff during storms.

Organic litter:

Material derived from living plant organisms, such as leaves and branches.

Orthophoto:

A corrected and standardized aerial photo; generally at a scale of 1:24,000.

Oxidation:

Oxidation is the addition of oxygen, removal of hydrogen, or removal of electrons from an element or compound.

Parent material:

(see Bedrock)

Pathogens:

Microorganisms, such as bacteria, viruses, or parasites, that can cause disease in humans, animals, and plants.

Pathway analysis:

The exploration of the relationship between different forms or phases of a pollutant.

Peak flow:

Maximum instantaneous streamflow during periods of high water runoff.

Photosynthesis:

The manufacture by plants of carbohydrates and oxygen from carbon dioxide mediated by chlorophyll in the presence of sunlight.

Physiographic:

The natural, physical form of the landscape.

Planar:

On a level plane; flat.

Point source:

A stationary location or fixed facility from which pollutants are discharged or emitted. Also, any single identifiable source of pollution, such as a pipe, ditch, ship, ore pit, or factory smokestack.

Pollutant loading:

The quantity of a contaminant entering the environment (soil, water, or air); typically related to specific land use practices.

Protozoa:

One-celled animals that are larger and more complex than bacteria.

Rainsplash:

The displacement of sediment by bombardment of raindrops.

Ravel:

The rolling or sloughing of sediment due to loss of cohesion in surface materials.

Reach:

(see Stream reach)

Reaeration:

(see Aeration)

Recharge:

The process by which precipitation seeps into the groundwater system.

Reduction:

The addition of hydrogen, removal of oxygen, or addition of electrons to an element or compound.

Reference condition:

A state of being governed primarily by natural environmental processes and subject to minimal human impacts; a place that represents natural conditions for comparison purposes.

Refugia:

An isolated place of relative safety from danger and hardship; the only remaining high quality habitat within an area.

Resource sensitivity:

The responsiveness or susceptibility of an environmental asset to hazardous inputs.

Respiration:

The process in which an organism uses oxygen for its life processes and gives off carbon dioxide.

Rill erosion:

The movement of sediment through one of the first and smallest channels formed by water runoff. The size distinction is not formal but has generally been defined as narrower than 12 inches.

Riparian:

Areas adjacent to rivers and streams. These areas often have a high density, diversity, and productivity of plant and animal species relative to nearby uplands.

Roughness element:

Materials or forms that provide frictional resistance to the flow of water; examples include boulders, vegetation, and gravel bars.

Runoff

That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface water.

Sediment:

A solid particle, generally derived from rocks and minerals, that is being transported or has been moved from its place of origin.

Sediment budget:

An accounting of the sources, transport, and deposition of sediment in a watershed over time.

Sediment yield:

The amount of sediment passing a particular point in a watershed per unit of time.

Sheetwash erosion:

The movement of sediment by unchanneled, overland flow of water.

Sinuosity:

A measure of the number of turns or curves in a stream expressed as the stream length (wavelength) divided by the radius of curvature.

Snow-water equivalent:

The amount of water contained in a given volume of snow.

Soil creep:

The slow downhill movement of the soil mantle that results from disturbance of the soil by freeze/thaw processes, wetting or drying, or plastic deformation under the soil's own weight.

Spawning:

The process of bringing forth offspring for aquatic organisms, such as oysters, fish, or frogs.

Stakeholders:

Individuals or organizations with a direct personal, economic, legal, social, or cultural interest in the watershed.

Stream gage:

An instrument to measure the volume of streamflow over time, generally reported in cubic feet per second (cfs).

Stream order:

A stream classification system in which the headwater channel is of order 1, and when two channels of the same order join, they create a channel of one higher order (e.g., 1+1=2; 1+2=2; 2+2=3; etc.).

Stream reach:

A continuous portion of a stream between two designated points.

Sub-basin:

A watershed that is subset of a larger watershed.

Substrate:

The particles that constitute the bed of a channel.

Surface water:

All water naturally open to the atmosphere, such as rivers, lakes, reservoirs, ponds, streams, estuaries, and springs.

Suspended sediment:

Sediment carried within the water column of a stream.

Technical module:

A section of this document that provides guidance on conducting a science-based assessment on a set of community resources or watershed processes.

Terrace:

A low-gradient surface formed by fluvial aggradation or erosion when the stream flowed at a higher elevation in the landscape. The term usually implies that the surface is rarely, if ever, inundated by floods in the current climate.

Total Maximum Daily Load (TMDL):

Generally refers to plans under the Clean Water Act that limit the amount of pollutant discharge over time.

Topography:

The relative positions and elevations of the landscape that describe the configuration of its surface.

Transpirations

The process by which water vapor is released to the atmosphere by living plants.

Tree throw:

The displacement of sediment held by the roots of a toppling tree; uprooting.

Trophic level:

A description of community structure based on the relationship between the production, consumption, and decomposition of energy (food) by organisms. Primary producers such as algae, herbivores such as deer, and carnivores such as wolves represent three different trophic levels.

Total suspended sediment (TSS):

(see Suspended sediment)

Turbidity:

The cloudy appearance of water caused by the presence of suspended and colloidal matter. Turbidity indicates the clarity of water and is an optical property of the water based on the amount of light reflected by suspended particles.

Unit pollutant loading rate:

(see Pollutant loading)

Upland:

An area of the terrestrial environment that does not have direct interaction with surface waters.

Volatilization:

The process of transferring a chemical from a liquid phase to a gas phase.

Washload:

Sediment carried in suspension by stream flow and that is of sizes not represented in the bed material.

Water budget

A summation of inputs, outputs, and net changes to a water resource system over a period of time.

Waterbody:

Any type of surface water, such as a stream, lake, or wetland.

Water quality criteria:

Levels of water quality expected to render a body of water suitable for its designated use. Criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, fish production, industrial processes, or other designated use.

Water quality standards:

State-adopted and EPA-approved ambient standards for waterbodies. The standards prescribe the use of the waterbody and establish the water quality criteria that must be met to protect designated uses.

Watershed:

The land area that drains into a stream; an area of land that contributes water runoff to one specific delivery point (same as catchment, drainage, or basin).

Watershed approach:

A coordinated framework for environmental management that focuses public and private efforts on the highest priority problems within hydrologically defined geographic areas taking into consideration both ground and surface water flow.

Watershed process:

A natural system of interactions in the environment (e.g., water movement, erosion, nutrient cycling).

Watershed storage:

The capacity of an area to store precipitation in the snowpack, lakes, wetlands, and groundwater.

Wellhead protection area:

A protected surface and subsurface zone surrounding a well or well field that supplies a public water system and through which contaminants could likely reach well water.

Wood debris:

Large pieces of organic matter, such as tree trunks and branches. No formal size distinction exists, but pieces are generally greater than 3 meters in length and 10 cm in diameter.

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